Work Order:_____

TEST PIQ

Please email this form and accompanying information to sales@us.bureauveritas.com.

The information questionnaire packet contains a list of questions designed to provide Curtis-Straus with the information needed to accurately evaluate your product as well as produce a precise report. Please return this form to Curtis-Straus **BEFORE TESTING BEGINS** so that we can prepare for any special needs you may have. ***Failure to complete the necessary sections may extend test time and delay the completion of your test report.***

☐ Product Information for report certificate: Company Name: _____

Product MN: _____

Product Name: _____

☐ Please provide a document that clearly defines the Performance Criteria. For guidance on Performance Criteria, please see Appenix A.

☐ Electrical Ratings: Input Voltage: _____Volts to _____Volts

Maximum Current: _____Amps

Input Frequency: _____Hz to _____Hz

☐ Emissions Class: ☐ Class A (Industrial) ☐ Class B (Consumer/Residential)

☐ Please provide a document listing ALL system internal frequencies, including clocks, data rates and power supply switching frequencies.

☐ Please provide details of the EUT cables and ports. Please see sample table in Appendix B.

☐ Please provide information on any support equipment to be used with the equipment under test. See Appendix C.

☐ Please provide setup instructions, including startup/shutdown procedures and any passwords.

☐ Sometimes testing is performed at night or on weekends. If you would like to leave a home or cell # please provide them in the spaces below.

Day Time # _____ Evening #_____ (Do not call after _____PM)

PLEASE SEE THE FOLLOWING SECTIONS AS APPLICABLE TO YOUR PRODUCT:

Appendix A – Performance Criteria Guidance.

Appendix B – Cable Information

Appendix C – Support Equipment

Appendix D - GR-1089-CORE required information and testing guidance

Appendix E - BSMI (Taiwan) required information and testing guidance

Appendix F - Korean required information and testing guidance

Appendix G - EN60601-1-2 required information and testing guidance.

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Appendix A – Performance Criteria Guidance

Please call the EMC Manager at Curtis-Straus for guidance if necessary. (978-486-8880)

For immunity testing, it is very important that a performance criterion be defined. Please describe what parameters can be monitored to ensure that the product is operating properly during the immunity conditioning.

EN55024 and EN300 386-2 have specific requirements for devices such as telecommunications equipment, data processing equipment, LAN, printers, copy machines, automatic teller machines and point of sale terminals. Please make sure the EUT is configured to enable these functions as detailed in the standards.

NEBS testing documents require that operating modes of the product be strictly controlled and monitored during the test. This is a complex requirement. It is critical to consider and plan for these requirements before testing commences. Generally, you must provide all technical instruments required for monitoring the performance of your product. Below is guidance information pulled directly from the standard.

NEBS GR-1089-CORE Guidance on System Operating Parameters	
Call processing equipment	If the EUT principally performs call processing, traffic should be simulated by the use of "load boxes" with a sufficient number of originating and terminating lines and trunks to generate a nominal traffic load equivalent to 50 percent of the rated call processing capacity of the EUT. A load box is a device that generates actual physical calls on the line and trunk ports of the EUT, exercising all the resources of the EUT that would be used for live traffic. An appropriate call mix (such as dial pulse and dual-tone multifrequency) as given in TR-TSY-000517) is to be carried by the EUT.
Distributed processing system	When the EUT is a distributed processing system composed of both central and peripheral processing subsystems, the test load level applies only to the portion of the EUT affected by the particular test. Portions of the EUT that the tester judges to be unaffected by a particular test may be operated at lower load levels for that test. However, all units should be loaded to some extent.
High-capacity processing Systems	For high-capacity processing Systems, it may be impractical to bring the load on the EUT up to the prescribed level solely with the use of load boxes. In such cases, it is acceptable to provide additional traffic using internal traffic simulation software or other artificial means to increase the call processing load to the prescribed level. However, a minimum of 6000 calls per hour should be provided by the use of load boxes. The capability to detect and report call processing errors in the artificial traffic must be comparable to that for traffic generated by the use of load boxes.
	Other switching system functions such as data transfer, maintenance routines, and AMA should also be on-going during the EMI testing.
	As another example, a disk drive or solid state memory unit shall be reading, writing, and transferring data, and performing any other design-intended functions during the tests.
NEBS GR-1089-CORE Guidance on System Test Conditions (Immunity)	
Bit Error Rate	During the immunity testing, the Bit Error Rate (BER) should be tested for digital systems. The performance criteria are given in the applicable Telcordia Generic Requirements, national and international standards. For example one DS1 (1.544 Mb/s) line should be tested for Bit Error Rate (BER) limits as specified in GR-507-CORE, *LSSGR: Transmission, Section 7.* Monitoring of the BER should be performed by testing a looped back (outgoing line connected to incoming line) DS 1(1.544 Mb/s) line for BER.
Synchronization	During immunity testing, the synchronization of the EUT should be tested. Figure 3-11 illustrates the test configuration that can be used to calculate the synchronization accuracy of a DS1 (1.544 Mb/s) signal, by comparing its extracted timing signal against, preferably, a local cesium primary frequency

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NEBS GR-1089-CORE Guidance on System Operating Parameters	
	standard (other appropriate high-accuracy primary frequency standards may be used). This test measures the relative phase accumulation between the input and output signals. Therefore, it is equally valid to use a high-quality frequency standard source that meets the EUT clock specifications. The EUT is synchronized to the same local cesium primary frequency standard. The clock extractor in Figure 3-11 is used to extract an all-ones unipolar 1.544 MHz clock signal from the DS1 (1.544 Mb/s) signal being tested. This clock signal is connected to channel 1 of the oscilloscope. The cesium standard is used to reference a frequency synthesizer, which in turn generates an all-ones unipolar 1.544-MHz clock signal. This signal is connected to channel 2 of the oscilloscope. Phase variations between the two 1.544-MHz signals are recorded on the storage oscilloscope. The Maximum Time Interval Error (MTIE) objective is 100 nanoseconds during any single immunity signal sweep of less than 30 minutes duration (observation period). See GR-1244-CORE, *Clocks for the Synchronized Network: Common Generic Criteria*.[25] During immunity testing, the test-signal generator should be synchronized to the same local cesium primary frequency standard as that used for synchronizing the EUT.
Voiceband Noise	During immunity testing, the C-message-weighted noise on tip and ring should be monitored with a transmission test set. All types of voiceband circuit cards should be monitored, including trunk circuits. A maximum of 20 dBrnC is the requirement for idle-channel noise level, and 16 dBrnC is tile objective idle-channel noise level for voiceband circuits as specified in GR-507-CORE when measured into a quiet termination. Idle- channel noise levels for other connections are also specified in GR-507-CORE.

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Appendix B – Cable Information

Please note, you may fill in the following table OR provide a separate document with the following information included.
Also, please note any ports that will remain UNPOPULATED during testing and the justification for leaving the ports unpopulated.

CABLE TYPE (e.g. DB-9 Serial)	**QTY**	**SUPPLIED LENGTH**	**MAX LENGTH (L) SUPPORTED** **(choose one of the following)** (A) L<3m (B) 3m<L<10m (C) L>30m (D) other	**SHIELDING** **(choose one of the following)** (A) Braid (B) Foil (C) Over Individual Conductors (D) Connector not shielded (E) None	**Type (Copper/ Optical)**	**Indoor Cable / Outdoor Cable?**	**FERRITES (YES/NO)**
Note: Please provide as many cables as possible for testing. Each cable should have a minimum length of one meter, unless it is normally less than one meter. In case of "emergency", Curtis-Straus has a selection of commonly used cables available for testing purposes.							

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Additional Cable information for GR-1089-CORE testing

Please note, you may fill in the following table OR provide a separate document with the following information included. Schematics of interface are required (see Appendix D).

OUTDOOR CABLE TYPE (e.g. POTS, T1)	QTY	CONDUCTORS (2/4)	SERIES TYPE (Y/N)	POWER ON TIP/RING (Y/N)	FUNCTIONALITY VERIFICATION TIME (MIN)

Series type: series type interfaces do not terminate the telecommunications conductors. Examples from GR-1089-CORE are: RF filters, modular plugs and jacks, and secondary protectors.

Power on Tip and Ring: Telecommunications ports that do not generate span voltages, ring voltages, etc., are considered "dry". Interfaces that are not dry are subjected to short-circuit testing.

Functionality verification time: the time it takes to verify the product's operation after the test. (how long does it take to confirm operation after replacing the test cable with the support equipment communications cable)

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Appendix C – Support Equipment

Please note, you may fill in the following table OR provide a separate document with the following information included.

Support Equipment	Model Number	Serial Number

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APPENDIX D – If testing to GR-1089-CORE

- ☐ The system must be fully configured as delivered to CARRIERS. The product should be fully operational, suitable configured and should be typically loaded with production equipment including hardware, software and firmware for application in the networks of the CARRIERS.
- ☐ Please be sure that the cabling for testing is the appropriate length for the cable routing once the EUT is placed in a rack. Power cable should be at least 25ft, Signal leads which connect to support equipment should be at least 40ft and looped back signal leads should be at least 25ft.
- ☐ Please provide a detailed write-up on how to setup the product and support equipment. It is also important to include direction on how to get the EUT into the correct operating state to generate traffic. Please include a connection diagram and the programming or button sequence to operate the equipment. We will also need detailed information on the parameters to monitor during the test such as LEDs, Bit Error Rate counters, incrementing displays, etc. For example, on a Fireberd, the number of packets sent should go up, the number of errors not change. Give thought to a (preferably simple) test which verifies that the monitoring parameters are functioning. For example, if we break a data loop then the monitoring functions should indicate an error condition.
- ☐ If you have contracted for Sections 7 (Safety) or 9 (Bonding and Grounding) you must provide schematics and a list of all power converters in the system (dc/dc, dc/ac, ac/dc).

  Warning: Embedded DC supplies of greater than 150W must be grounded. Also, where multiple sources have parallel outputs, the rated output is considered to be the sum of the rated outputs of all individual sources that are in parallel. If the supplies are greater then 150W and are NOT grounded, please contact your Curtis-Straus representative before testing begins. Failure to do so may result in extra test time.
- ☐ If you have contracted for section 4 Surge or Power Fault testing, schematics of the communications interfaces and data sheets for all protection components are required prior to testing.
- ☐ All fiber optic components included in the finished system must be certified under the FOC program. Please provide the Component, Manufacturer, Part Number and FOC Report Number. If you have any questions about the FOC program, please contact your Curtis-Straus sales representative.
- ☐ Please provide information on the software used during testing.
- ☐ Please provide a list of all telecom ports and the associated PCB.
- ☐ Please provide a list of all subassemblies. This includes a description, MN, SN and Rev Level.

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APPENDIX E – Checklist for BSMI (Taiwan)

INFORMATION FOR TESTING

- ☐ Please make sure that all ports on the product have cables, and that each unique cable has a proper termination.
- ☐ For Class B products, the BSMI requires that all support PC peripherals **MUST** be BSMI certified (PCs, monitors, keyboards, etc.) If your company cannot supply BSMI certified support equipment please contact your sales representative.

FOR REPORT

- ☐ Please list your company's Taiwanese importer or Taiwanese company affiliate. Please make sure you supply the contact name, company name, address, voice phone number and fax number. Note: BSMI will not accept applications without an in-country contact.
- ☐ Please supply a ***technical*** description of the EUT that provides the reviewer with a clear description of the units intended purpose and function.
- ☐ Please provide a detailed description of the software used during testing, including rev level.
- ☐ Please describe how the unit is operating during testing.
- ☐ Please supply details for all **external and internal** EMI suppression components used in the product (i.e. ferrites, etc.) Please supply the manufacturer, part number and any applicable EMI related characteristics (i.e. the impedance at specific frequencies for a ferrite.)
- ☐ Please provide a copy of the current ***user's manual***, ***installation instructions*** and ***product catalog***. The manual for class B products must be written in Traditional Chinese. For class A products the manual can be in English but it **MUST** include a class A warning label. (note: class A warning label must still be in Chinese.) Also, the user's manual **MUST** contain the model number of the unit being certified on the cover of the manual and within the manual.
- ☐ Please provide the location of the BSMI ID label. This mark can be placed on the product itself or the product label. If the product is too small, the mark can be placed on the package or in the user's manual.
- ☐ For Class A products, please supply a description of the location of Class A Warning label on the product ***and*** in the manual.
- ☐ Please supply a list of all internal components (i.e. motherboard, hard drive, cd rom etc.)
- ☐ If you test a fully optioned system and plan on selling reduced configurations please supply the following information:
    - o Model numbers of the reduced configurations
    - o Descriptions of the reduced configurations
    - o The differences between the reduced configurations and the system that was tested.
- ☐ If the unit will have multiple model numbers then please supply a list of all model numbers to be covered. This sometimes happens when more than one company sells a manufacturer's product. In this case we will need the users manuals from each company selling the product with the appropriate model number.
- ☐ Please provide your CCC (Code of Classifications of Commodities). For a list of CCC Codes visit: www.bsmi.gov.tw/wSite/public/Attachment/f1265940780781.pdf
- ☐ BSMI requires a Safety report for certification. The safety report must be CB report to IEC60950. If the product does not fall under IEC60950 then the report needs to be written to the applicable Chinese (CNS) standard. This can be converted for you for an additional fee.

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APPENDIX F – Checklist for Korea

Please note: If your product uses an external power supply that will be sold with the product, the power supply MUST be eK marked ***Please contact your sales representative with questions.***

- ☐ Please provide the following information about the Applicant: Company Name, Address, Contact Name, Contact Telephone, Contact Facsimile, Contact Email, Company CEO and Trademark.
- ☐ Please provide the following information about the Manufacturer: Company Name, Address, Telephone, and Facsimile
- ☐ Please provide the following information about the Factory: Factory Name, Address, Contact Name, Telephone, Facsimile.
- ☐ Please provide the following information about your Korean Representative: Company Name, Address, Contact Name, Telephone, Facsimile and Email.
- ☐ Please provide your Applicant ID Code: This is the 3 digit alphanumeric code for your company. If your company does not have an Applicant ID Code, you must fill out an Applicant Code Request Letter. (AAA, in the sample label below)
- ☐ Please provide your Requested Product Code (BBBB….. shown in sample label below). This code can be anything (up to 14 characters) but must be unique to this application and usually includes the model number or model name of the EUT. For example, if the EUT's MN is the "Widget 2000" your code could be: WIDGET2000 or WIDG2000.
- ☐ Please provide a sample label. Example:

AAA = Applicant ID Code
BBBBBB… = Product Code
X = A (for Class A devices), X = B (for Class B devices)

- ☐ Please provide a user's manual translated into Korean. An English manual may be provided but could be subject to an additonal translation fee as determined by the Korean office. The user's manual must include the following:
  - A simple description of the equipment describing its function.
  - Specifications: voltage, frequency, size, weight, environmental conditions (temperature, humidity, etc.) interface, etc.
  - Instructions for installation, maintenance, operating and repairing, etc. Also, it must include safety precautions.
  - The following table must appear in the manual; these statements must also be translated into Korean.

Class	User's Guide
A	Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use
B	As this equipment has obtained EMC registration for house hold use, it can be used in any area including residential area.

Please note that if the user's manual does not include this information, you must provide supplemental documents.

- ☐ Please attach a **FUNCTIONAL** block diagram showing data paths, data rates, clocking frequencies, power distribution, etc. (The more complicated the better) Please note that if you are also applying for BSMI, you may use the same functional block diagram for Korea.
- ☐ The Applicant Name, Product Name, Model Name, Manufacturing Year/Month, and KCC ID must appear on the product OR on the packaging OR in the user's manual. If this information will appear on the product or packaging, please provide a photo of this. If it appears in the manual, please provide the page number.

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APPENDIX G – Checklist for Medical Devices

☐ Is the EUT considered Life Supporting or Non-Life Supporting Equipment?

☐ Please provide a document that defines the essential performance of the EUT. Essential performance includes the primary functions of the product as well as performance characteristics necessary to maintain the residual risk within acceptable limits.

☐ NOTE: Also, under the test conditions specified in 36.202, the equipment or system shall be able to provide the essential performance and remain safe. The following degradations associated with essential performance and safety shall not be allowed:

- component failures;
- changes in programmable parameters;
- reset to factory defaults (manufacturer's presets);
- change of operating mode;
- false alarms;
- cessation or interruption of any intended operation, even if accompanied by an alarm;
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm;
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment;
- noise on a waveform in which the noise is indistinguishable from physiologically produced signals or the noise interferes with interpretation of physiologically-produced signals;
- artefact or distortion in an image in which the artefact is indistinguishable from physiologically-produced signals or the distortion interferes with interpretation of physiologically-produced signals;
- failure of automatic diagnosis or treatment equipment and systems to diagnose or treat, even if accompanied by an alarm.

For equipment and systems with multiple functions, the criteria apply to each function, parameter and channel.

The equipment or system may exhibit degradation of performance (e.g. deviation from manufacturer's specifications) that does not affect essential performance or safety.

☐ Please provide the Input Power Rating (>1kVA or <1kVA)

☐ Please provide a list of all patient coupled cables.

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